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ABSTRACT

The major program objectives of agricultural occupations courses are (1) to develop agricultural competencies needed by individuals engaged in or preparing to engage in production agriculture, and in agricultural occupations other than production agriculture; (2) to develop an understanding of the career opportunities in agriculture; (3) to develop the ability to advance in agricultural occupations through continuing education; (4) to develop human relations abilities needed in agriculture; and (5) to develop the abilities needed to exercise and follow effective leadership. This planning guide has been designed as an aid to teachers and administrators who wish to plan or replan an agricultural occupations program at the secondary school level. A suggested procedure and sample forms are included to assist the teacher in developing courses of study using the Illinois Core Curriculum Project materials. The guide includes an introduction to agricultural occupations as a field of study, including the background legislation which precipitated it; suggested procedures for program development; program models; the Illinois Core Curriculum and its use in program development; program objectives; and course planning aids, including course planning forms and directions for their use. (KC)

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Agricultural Occupations Program Planning Guide

Illinois State Board of Education

Adult Vocational and Technical Education

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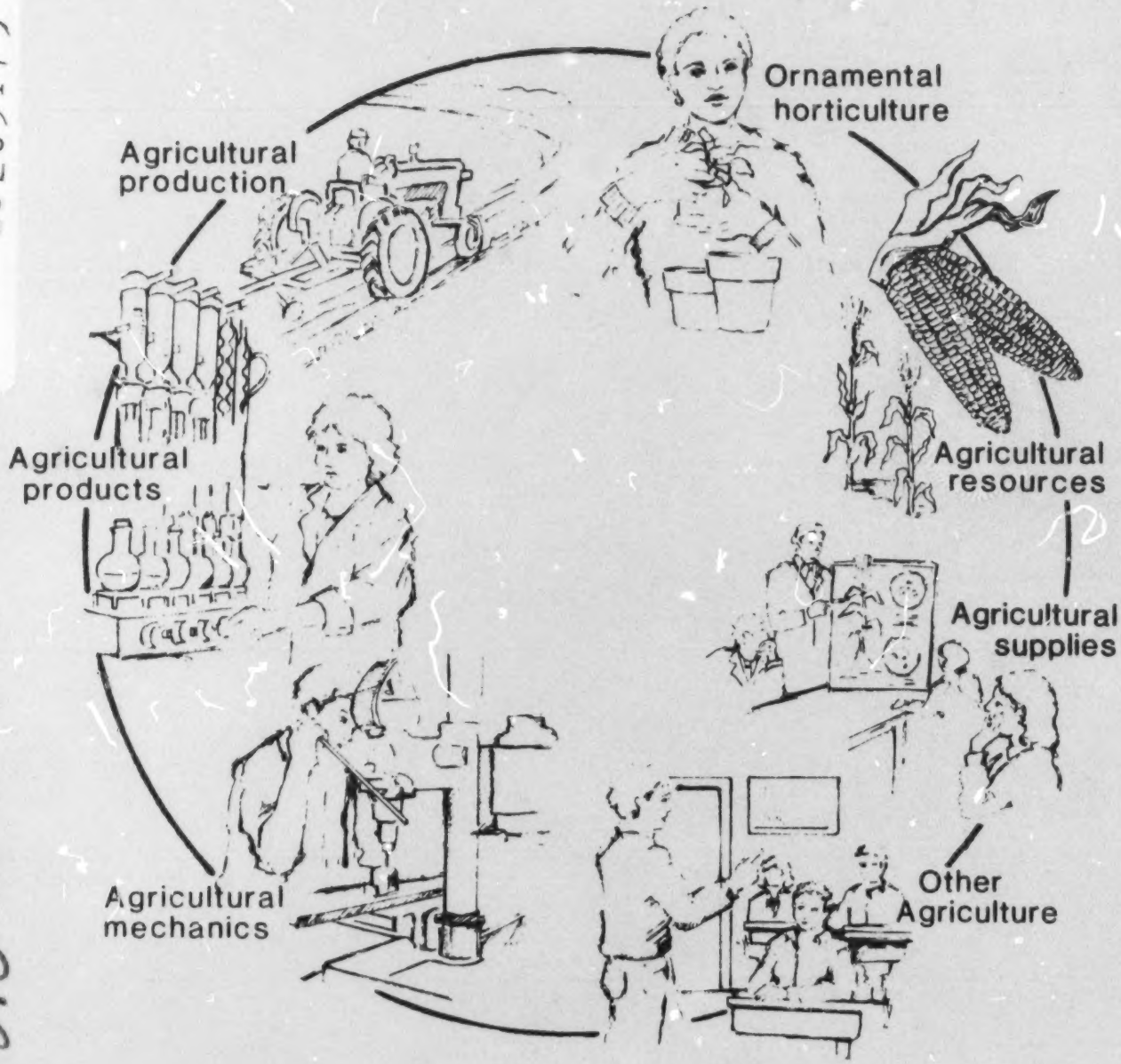

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16. General Description (State the general objective and suggested method of use. Summarize the content and tell how it is organized. Continue on back of this sheet or on another sheet, if necessary.).

This planning guide has been designed as an aid to teachers and administrators who wish to plan or replan an agricultural occupations program at the secondary school level. A suggested procedure and sample forms are included to assist the teacher in developing courses of study using the Illinois Core Curriculum Project materials.

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AGRICULTURAL OCCUPATIONS

PROGRAM PLANNING GUIDE

Introduction

Programs of agricultural occupations (vocational agriculture) in Illinois secondary schools have undergone considerable change since the passage of the Vocational Education Act of 1963. Prior to 1963, the recommended and commonly used program structure was a four-year program of year-long courses usually entitled Vo. Ag. I, II, III and IV. The content of these courses was developed using a cross-sectional approach to curriculum design developed with an emphasis on preparation for farming careers. Actually, the programs did more than that; however, enrollment was, for the most part, restricted to farm boys or other males who were interested in agriculture production as a career choice.

With the passage of the Vocational Education Act of 1963 and subsequent federal legislation and state plans, the objectives of agricultural occupations programs were broadened to include the following important change:

> "Any amounts allotted (or apportioned) under such titles, Act or Acts for agriculture may be used for vocational education in any occupation involving knowledge and skills in agricultural subjects, whether or not such occupation involves work of the farm or of the farm home, and such education may be provided without directed or supervised practice on a farm."[1]

With this important change in federal legislation a new set of program objectives was needed to direct program planning at the state and local level. The major program objectives of agricultural occupations used by most teachers and administrators are as follows:

1. To develop agricultural competencies needed by individuals engaged in or preparing to engage in production agriculture.

2. To develop agricultural competencies needed by individuals engaged in or preparing to engage in agricultural occupations other than production agriculture.

3. To develop an understanding of and appreciation for career opportunities in agriculture and the preparation needed to enter and progress in agricultural occupations.

4. To develop the ability to secure satisfactory placement and to advance in an agricultural occupations through a program of continuing education.

5. To develop these abilities in human relations which are essential in agricultural occupations.

6. To develop the abilities needed to exercise and follow effective leadership in fulfilling occupational, social, and civic responsibilities.

Illinois teachers of agriculture reacted to this new direction in the role and function of vocational education in agriculture by developing and teaching courses in off-farm agricultural occupations, broadening the content of these courses and revising the supervised farming concept to include school based experience programs and cooperative education.

The U.S. Office of Education developed a classification system to identify and promote the following agricultural occupations programs:

01.01 Agricultural Production

01.02 Agricultural Supplies and Services

01.03 Agricultural Mechanics

01.04 Agricultural Products, Processing and Marketing

01.05 Horticulture

01.06 Renewable Natural Resources

01.07 Forestry

In Illinois, vocational reimbursement was made to local educational agencies which developed and conducted approved educational programs in one or more of these taxonomic areas. A priority funding arrangement was developed to

provide a higher rate of reimbursement for those programs designed to prepare students for off-farm rather than farm-oriented agricultural occupations.

Many schools shifted to an offering of a large number of semester courses in order to accommodate a broad range of students. The agricultural production area which was de-emphasized in state funding guidelines was also deemphasized in local instructional programs in some schools. This resulted in an erosion of the basic agricultural production knowledges and skills which are important to the development of a sound off-farm agricultural occupations program.

Program Development

Approximately 90 percent of the agricultural occupations departments in Illinois high schools are single teacher departments. In many of these schools course sequences can be developed in no more than one or possibly two taxonomic areas. Thus, many high schools teach courses which lead to employment in occupations related to agricultural production and/or agricultural supply and service where job opportunities seem to be most prevalent. In most rural areas, agricultural jobs are in or closely related to these two areas which improve the opportunity for securing adequate student enrollment. The few students who are interested in the taxonomic areas of horticulture, agricultural products, natural resources and forestry might be enrolled in individualized instructional programs including cooperative education at the high school or sent to a nearby area vocational center for specialized training. Some local high schools may meet the need for specialized training by developing a multiple teacher department of agriculture.

Using approved program planning techniques to determine employment information and student needs, the school should determine how many and which taxonomic areas should be represented in the agricultural occupations

curriculum. In planning and developing the agriculture program the following suggested procedures are recommended:

1. Citizens' advisory councils should be utilized to help determine community needs, to clarify purposes for the local program and to suggest appropriate areas of instruction to be included in the program.
2. The programs to be offered, the course pattern and course titles and the content of these courses should be determined by an analysis of the agricultural industry of the area and an identification of the agricultural knowledges and skills needed by employees.
3. Information concerning the school situation (enrollments, facilities and equipment, available staff, course offerings and monetary constraints) should be obtained before programs and courses are planned.
4. Program planning data should be obtained from farm and community surveys, census reports, state and national employment studies and informal contacts with agriculture leaders.
5. The vocational programs should include a sequence of courses which lead to entry-level employment or to further education.
6. The major functions of each course such as exploration, job preparation, or preparation for higher-level courses should be identified.
7. At the ninth- and tenth-grade level, occupational and career orientation and exploration, basic plant and animal production, elementary agricultural and mechanical skills, and leadership and citizenship development through the FFA should be emphasized.
8. At the eleventh- and twelfth-grade levels, occupational preparation in specialized areas of agriculture should be emphasized.

9. Agricultural occupations courses in high schools should be articulated with instructional programs in elementary schools, area vocational centers, and postsecondary institutions.

10. Instructional programs should be designed to serve students with special needs including the handicapped, disadvantaged, college-bound and minority students.

11. A master list of units and problem areas to be taught during the four years of instruction together with suggested time allocations should be developed.

12. Top priority should be given to those units and problem areas which are related to students' supervised experience programs and which will result in some type of field application.

13. Courses of study should include both the "why" and the "how." Decision-making and management as well as manipulative skills should be taught.

14. An appropriate course title, a course description and student performance objectives should be prepared for each course.

15. Instruction in the affective domain should be provided as a part of each course.

16. Units and problem areas should be stated in a form which corresponds to jobs and operations from the world of work.

17. Problem areas should be stated in the verbal "ing" form such as "selecting breeding ewes."

18. Problem areas in animal and crop production should correspond to natural divisions in the life cycle or to major jobs which agriculture employees must perform.

19. Problem areas which are seasonal in nature (planting corn, growing bedding plants) or are related to a scheduled event (FFA public speaking contest) should be scheduled before scheduling problem areas which can be effectively taught any month of the year.

20. Agricultural mechanics and horticulture instruction should be scheduled so that the shop and greenhouse are utilized throughout the school year.

21. Problem areas should be assigned to the course or the year of instruction on the basis of the following criteria:

    A. Difficulty of material

    B. Opportunity for application by student

    C. Readiness of student to learn

    D. Necessity for prerequisite learning.

22. Approximately 150-160 actual teaching days per year should be scheduled.

23. Approximately 25-30 problem areas per year should be scheduled.

Program Models

Each local agency should develop a program structure which meets employment needs, student needs and interests and state requirements for vocational funding. A special effort should be made to consider the following factors in developing a program structure:

1. Vocational education programs supported by vocational education funds should be designed to prepare persons enrolled in public schools for employment or for additional training at the postsecondary level.

2. Vocational education programs at the secondary level should be articulated with programs offered at the postsecondary level and career awareness programs at the K-8 level.
3. Vocational education programs should be comprised of an organized and articulated sequence of courses.
4. Occupational orientation courses should provide for 200 minutes of class time per week for a full school year.
5. Occupational training courses should provide for 250 minutes of class time per week for a full school year.
6. Vocational youth organization activities and supervised occupational experience programs should be offered as an integral part of the instructional program.

Suggested program models are included as Figure 1 and 2. These program models are based on the following assumptions:

1. The high school program of agricultural occupations is multipurpose, preparing some students for placement in an agricultural occupation or in further education, but also, providing career awareness and orientation, vocational exploration, general education in agriculture, leadership training, and citizenship development.
2. All agricultural occupations students should hold active, participating membership in the FFA and should have a S.O.E.P.
3. Courses offered at the ninth- and tenth-grade level will be year-long courses.
4. The teaching of specialized occupational preparation courses requires the resources of a multiple-teacher high school department of agricultural occupations, or an area vocational center.

5. Occupational preparation for the non-farm agricultural occupations should be offered through the mechanism of a cooperative education placement for work experience program scheduled in the senior year after the student has taken two or more basic agriculture courses.
6. Students interested in an agricultural occupations program or area not included in the school's course offerings will be provided with the opportunity for individualized instruction at the high school or enrollment in an area vocational center program.

Grade Level	Course Titles
9	Introduction to Agr. Occupations
10	Basic Agr. Science and Practice
11	Advanced Agr. Science and Mechanics
12	Agricultural Business Management
	and/or
12	Agr. Occupations Coop.

Figure 1. Proposed Program Model for a One-Teacher Agriculture Department in a Rural Area.

Grade Level	Course Titles		
9	Introduction Agr. Orientation I		
10	Basic Agr. Science and Practice		
11 and 12	Ag. Prod. and Ag. Bus. Track	Ag. Mech. Track	Horticulture Track
	Ag. Prod. and Mech.	Ag. Const.	Basic Hort.
	Ag. Bus. Mgt.	Ag. Power and Mach.	Adv. Hort.
	and/or		
	Ag. Occupations Coop.		

Figure 2. Proposed Program Model for a Multiple Teacher Department in a Rural Area.

The Illinois Core Curriculum

The development of a core curriculum in agriculture for Illinois may be viewed as an attempt to return to the "basics" in vocational education in agriculture. It is also an attempt to develop instructional materials for emerging areas of agriculture which are basic but also new. Apparently, many students who enroll in agricultural occupations courses are not completing a sequence of courses which prepare for employment or provide a foundation for further education. Also, the large increase in enrollments of non-farm students many of whom have a very limited agricultural experience background suggests a need for emphasizing a better preparation in basic agriculture. In the past, the development of a curriculum based on local farming problems was seen as an important and desirable approach to determining course content. Little effort was made to determine course content important in all parts of the state. The changing conditions previously identified suggest that some core units and problem areas important in most communities in Illinois can be identified and included in a core curriculum.

Use of the Core Curriculum in Program Development

The Core Curriculum in Agriculture developed as a part of a state funded project, R-33-21-D-0542-388, includes a listing of units, problem areas and instructional material to be used in the teaching of these units and problem areas. The core curriculum materials are divided into Core I, II, III, and IV so that content for each year of a four-year agricultural occupations sequence can be selected by the local teacher. The core curriculum is a collection of instructional materials from which a local teacher can develop a core of instruction. The project staff recommends that at least 60 percent of the course content be derived from the core units and problem areas. The other 40 percent of the curriculum could be taken from the core or derived

from problem areas important in the local community or important to the students enrolled.

The units and problem areas included in Core I and Core II are designed to contribute to the exploration and orientation phase of the vocational program. Materials included in Core III and IV are designed to contribute to the skill development or job preparation phase of the vocational program. The units included in each of these core outlines are as follows:

A. Orientation to Agricultural Occupations

B. Leadership and Citizenship

C. Supervised Occupational Experience

D. Livestock Science

E. Crop Science

F. Soil Science and Conservation of Natural Resources

G. Horticulture

H. Agricultural Mechanics

I. Agricultural Business Management

Each unit is subdivided into problem areas which form the basis for instructional packets or modules for each of the four core programs. A listing of the problem areas for Core I and Core II is included in the following section.

Rural Agriculture Program - Core I

UNIT A: Orientation to Agricultural Occupations

PROBLEM AREAS:

1. Introduction to school, the agriculture program and FFA
2. Introduction to agriculture and society
3. Identifying occupations in agriculture

UNIT B: Leadership and Citizenship

PROBLEM AREAS:

1. Understanding and participating in FFA
2. Understanding the duties and responsibilities of FFA members
3. Developing basic parliamentary procedure skills
4. Developing basic public speaking skills

UNIT C: Supervised Occupational Experience

PROBLEM AREAS:

1. Orientation to supervised occupational experience
2. Planning my supervised occupational experience program
3. Starting and keeping SOEP records

UNIT D: Livestock Science

PROBLEM AREAS:

1. Understanding the livestock industry
2. Identifying breeds of livestock and poultry
3. Selecting livestock
4. Feeding livestock

UNIT E: Crop Science

PROBLEM AREAS:

1. Identifying crop and weed seeds
2. Judging quality of grain for seed and for market
3. Growing corn
4. Growing soybeans

UNIT F: Soil Science and Conservation of Natural Resources

PROBLEM AREAS:

1. Collecting soil samples
2. Applying soil sample test results

UNIT G: Horticulture

PROBLEM AREAS:

1. Growing vegetables
2. Beautifying the homestead

UNIT H: Agricultural Mechanics

PROBLEM AREAS:

1. Identifying, fitting and using hand tools
2. Using selected power tools

3. Developing safe work habits in agricultural mechanics
4. Developing basic carpentry skills

Rural Agriculture Program - Core II

UNIT A: Orientation to Agricultural Ocupations

PROBLEM AREAS:

1. Orientation to vocational agriculture course and SOEP
2. Developing effective study habits

UNIT B: Leadership and Citizenship

PROBLEM AREAS:

1. Participating in individual and group activities in the FFA
2. Developing leadership skills

UNIT C: Supervised Occupational Experience

PROBLEM AREAS:

1. Summarizing and analyzing records
2. Estimating income and expenses for crop and livestock projects

UNIT D: Livestock Science

PROBLEM AREAS:

1. Advanced feeding and caring for livestock
2. Providing housing and equipment for livestock
3. Judging and evaluating meat and livestock products

UNIT E: Crop Science

PROBLEM AREAS:

1. Harvesting corn
2. Harvesting soybeans
3. Growing small grain
4. Harvesting small grain

UNIT F: Soil Science and Conservation of Natural Resources

PROBLEM AREAS:

1. Understanding soils
2. Judging land-use capability
3. Buying and using fertilizers

UNIT G: Horticulture

PROBLEM AREAS:

1. Identifying trees, shrubs, and flowers
2. Propagating plants sexually and asexually
3. Growing indoor plants

UNIT H: Agricultural Mechanics

PROBLEM AREAS:

1. Developing arc welding skills
2. Developing acetylene welding skills
3. Surveying in agriculture
4. Developing basic shop skills

A similar list of units and problem areas for Core III and IV will be developed during Phase III and Phase IV of the Core Curriculum in Agriculture Project. The entire collection of Core I-IV materials for rural agriculture programs is intended to be used in the development of agricultural occupations programs which are oriented towards agricultural production, agricultural supply and service or other agribusiness areas. Teachers who are interested in developing programs in horticultural occupations and urban agriculture should refer to the Metropolitan Agriculture Program Core developed as a part of this project. In both rural and metropolitan programs, cooperative vocational education should be considered as an essential part of the Agricultural Occupations sequence. These cooperative vocational education programs should be scheduled during the junior and/or senior years as a "Capstone" course for agricultural occupations students. Teachers and administrators who need more information on how to plan and conduct these programs should secure a copy of the Handbook for Cooperative Vocational Education in Illinois published by the Department of Adult, Vocational and Technical Education, Illinois State Board of Education.

Program Objectives

Early in the program planning process, the agricultural occupations teacher and the advisory council should discuss and list important program objectives. Some suggested program objectives for grades 9 and 10 are as follows:

1. To assist with the occupational guidance of high school youth.
2. To provide basic education in agriculture for high school youth who plan to engage in farming or agricultural production.
3. To provide basic education in agriculture for high school youth who plan to engage in agribusiness or other off-farm, agricultural areas.
4. To provide leadership training and socio-civic preparation for high school youth.
5. To provide high school youth with opportunities to engage in supervised occupational experience in agriculture.
6. To provide high school youth with the necessary basic training in agriculture to enable them to achieve the maximum value from advanced agriculture at an area vocational center or in the high school.
7. To provide students with learning experiences which will enable them to bridge the gap between general education courses and vocational education.
8. To provide a setting where students can make meaningful and practical applications of academic subject matter learned in other courses.
9. To teach students how to work and how to study.

A similar list should be developed for grades 11 and 12. The development of separate lists of program objectives for grades 9 and 10 and grades 11 and 12

helps the teacher to distinguish the role and function of vocational education in agriculture at these levels and to keep the program directed towards the proper career development functions.

Course Planning Aids

After a general program structure including a sequence of courses and program objectives has been developed, the teacher should prepare appropriate course titles and descriptions and determine the content of each course.

In developing course content, the teacher should refer to the units and problem areas included in the Illinois Core Curriculum in Agriculture and decide which areas should be included in the local course outlines. As indicated previously, the core curriculum material should not be adopted in its entirety but may comprise approximately 60 percent of the course content. The remaining 40 percent could be composed of units of instruction which are appropriate for the local community or to the students enrolled. This suggestion cannot be overemphasized. The core curriculum should be localized and supplemented to meet the educational needs of students who will be enrolling in the agricultural occupations program.

Some course planning forms have been included in this publication to assist the teacher in planning the local program of instruction. Suggestions for using these forms are included here to assist the teacher in the development of functional course outlines and plans.

FORM I

COURSE PLANNING SHEET

School _____ Teacher _____

Courses Offered in the 19__-19__ School Year

Grades	Course Number	Course Title and Description

FORM II

COURSE PLANNING SHEET

School _____ Instructor _____

Course titles:

1 _____ 4 _____

2 _____ 5 _____

3 _____ 6 _____

Allocation of Course Content by Courses

Units or Other Areas of Agriculture	Courses					
	1	2	3	4	5	6
	(Number of days)					

FORM IIA

COURSE PLANNING SHEET

School _____ Instructor _____

Allocation of Course Content by Courses

Units or Other Areas of Agriculture	Courses 1	2	3	4	5	6
	(Number of days)					

FORM III

COURSE PLANNING SHEET

School _____ Instructor _____

Course Content: Allocation by Months

Units and Problem Areas	Fall			Winter			Spring		
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May

FORM IV

COURSE PLANNING SHEET

School _____ Instructor _____

Course _____

Course Content--Allocation of Time to Problem Area
Identification of Key Knowledges and Skills

Units, Problem Areas (Coded or Abbreviated) Key Knowledges (What does the student need to know?) Key Skills (What does the student need to do?)	Days
Month (_____)	

Form I

The Form I planning sheet may be used to list the course number and title for each grade level. Also, space has been provided to write a short description for each course. The following example illustrates the information which might be included on Form I:

Grade	Course Number	Course Title and Description
9	101	Introduction to Agricultural Occupations

This is the first basic and exploratory agribusiness course offered to ninth-grade agricultural occupations students. Occupational information accompanies the two major science units and the mechanics and construction unit to help the student become occupationally oriented so that occupational and educational planning can be started. Human relations and leadership development skills are implemented through participation in FFA activities.

Form II and IIa

Form II is designed to serve as a planning sheet for allocating the number of instructional days for each unit and for each course. On this form the teacher should enter the number of days (periods) to be devoted to each major unit of study such as Animal Science. The course titles for all courses should be written in the blanks at the top of Form II. Form IIa is the same as Form II except no blanks have been provided for course titles. Form IIa is to be used as the second and subsequent planning sheets for this phase of the course planning process. The following example illustrates the information which might be included on Form II and IIa.

Units	Courses					
	1	2	3	4	5	6
	(Number of days)					
Animal Science	35	30	10	8	0	5

Form III

The Form III planning sheet is designed to record the month during which the instructional days for each unit and problem area will be scheduled. This sheet helps the teacher schedule instructional areas during the appropriate season or month of the year. It also helps the teacher to make efficient use of shop and greenhouse facilities and to arrange out-of-class activities during months when the weather is likely to be conducive to field work. The following example illustrates the use of Form III:

Units and Problem Areas	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Crops Science:									
Growing corn							3	7	
Identifying crop and weed seeds			2	3					

Form IV

The last step in using the four planning sheets is to re-write the units and problem areas for each course and to designate the estimated amount of time to be allocated to each area. Form IV can be used for this purpose and also as a place to record a breakdown of knowledges and skills to be included in each problem area. The following example without the knowledges and skills shows how Form IV can be used.

September	Days
Orientation to Agricultural Occupations:	
1. Introduction to school, the agriculture program and FFA	2
Leadership and Citizenship:	
2. Understanding and participating in FFA	5
3. Understanding the duties and responsibilities of FFA members	4

Soil Science and Conservation of Natural Resources:

4.	Collecting soil samples	2
5.	Applying soil sample test results	5

A course outline should be developed for each course and copies distributed to the administrator and to students enrolled in agriculture courses. Measurable student objectives should be written for each course and teaching plans should be prepared in advance for several problem areas.

[1] Taken from the Vocational Education Act of 1963 (Public Law No. 88-210).